REMARKS

Claims 1-20 are now pending in the application. Claims 1-10 and 14-20 are allowed. Claims 11-13 stand rejected. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the remarks contained herein.

REJECTION UNDER 35 U.S.C. § 103

Applicants respectfully traverse the rejection of Claim 11 under 35 U.S.C. § 103(a) as being unpatentable over Paul et al. (U.S. Pat. No. 5,332,927) in view of Chalasani et al. (U.S. Pat. No. 5,969,436) and Kakalec et al. (U.S. Pat. No. 5,982,598).

Paul et al. do not show, teach, or suggest using a contactor to connect batteries to a load, as admitted by the Examiner. **Second Office Action, p. 3 (June 10, 2003)**. Paul et al. also do not show, teach, or suggest monitoring voltage that is output by the batteries with a controller, disconnecting batteries from a load using the controller when the voltage falls below a low voltage disconnect threshold, and minimizing voltage transients and current surge when reconnecting the batteries to the load using the controller, as admitted by the Examiner. **Second Office Action at 3**.

Chalasani et al. do not show, teach, or suggest minimizing voltage transients and current surge when reconnecting batteries to a load using a controller.

Chalasani et al. employ a low voltage disconnect (LVD) circuit in an intermittent battery charging scheme. Chalasani et al. disconnect a battery from an AC/DC rectifier during normal operating conditions (col. 4, line 41). While disconnected, the battery self-discharges. A temperature transducer detects the temperature of an environment in which the battery is located. The battery is reconnected to the AC/DC rectifier only

when the temperature of the environment is within a predetermined temperature range (col. 4, line 31).

When a power source that supplies power to the AC/DC rectifier fails, the battery begins to provide power to a load (col. 4, line 60). While the AC/DC rectifier remains unpowered, the battery is disconnected from the load when the battery discharges to a low voltage threshold to prevent the battery from completely discharging (col. 5, line 3).

Voltage transients and current surge are not minimized when the battery is reconnected to the load as required by the claims. For example, Chalasani et al. do not teach first lowering a voltage of the AC/DC rectifier to a discharged voltage of the battery before connecting the battery to the AC/DC rectifier as taught by Applicants. Chalasani et al. are silent with respect to a specific reconnection procedure to reconnect the battery to the load.

Kakalec et al. do not remedy the shortcomings of either Paul et al. or Chalasani et al. Kakalec et al. teach a protective circuit for a grounded power plant. The power plant includes a power supply with rectifiers that receive a source of electrical power and at least one battery that is used as a source of redundant power (col. 4, line 3). A power distribution frame (PDF) connects the power supply to a load via a set of supply and return conductors. The power supply, the PDF, and the load are grounded at a single-point ground via ground conductors (col. 4, line 9).

The PDF includes a fuse that disables a corresponding supply conductor when a fault-to-ground condition occurs (col. 4, line 31). The PDF also includes a protective circuit with a voltage clamping device connected between the return conductors and the single-point ground. When a fault-to-ground condition occurs, the fuse opens. The

interruption of current due to the opening of the fuse combined with a substantial inductance in the ground path induces voltage transients on the return conductors (col. 4, line 63). The voltage clamping device attenuates the voltage transients to a safe value to prevent damage to the load.

A contactor does not connect the battery to the load as required by the claims. In the rejection of Claim 11, the Examiner contends that in col. 4, lines 5-10 Kakalec et al. teach a contactor that connects batteries to a load. **Fourth Office Action, p. 3 (My 24, 2004)**. Applicants disagree. During normal operations, Kakalec et al. teach that the battery is always connected to the load. The PDF includes a fuse that opens when a fault-to-ground condition occurs, which disables one or more supply conductors (col. 4, line 59). This is different from a contactor that selectively connects batteries to a load. When the fuse opens, a complete disruption of service occurs to the specific load module at which the fault-to-ground condition originates. The open fuse prevents damage to the load and not the battery.

The fuse does not open based on a voltage output of the battery. For example, the fuse does not open when the voltage output of the battery falls below a low voltage disconnect threshold as taught by Applicants. The fuse only disconnects the individual supply conductor(s) connecting to the load module at which the fault-to-ground condition originates (col. 4, line 31). Therefore, the battery remains connected to the remaining load modules following the fault-to-ground condition. If the source of electrical power in the system taught by Kakalec et al. fails, the battery remains connected to the load, potentially risking damage to the battery due to excessive discharge.

Kakalec et al. do not show, teach, or suggest minimizing voltage transients and current surge when reconnecting batteries to a load using a controller as required by the claims. Kakalec et al. are silent with respect to closing and/or replacing an opened fuse after a fault-to-ground condition occurs or with respect to a specific reconnection procedure. The PDF includes a voltage clamping device that prevents damage to the load due to voltage transients (col. 4, line 37). However, the voltage clamping device is always connected to the return conductors and the single-point ground. The voltage clamping device does not disconnect the battery from the load or minimize voltage transients or current surge when the battery is reconnected to the load. Therefore, one would not be motivated to incorporate the teachings of Kakalec et al. into the systems taught by either Paul et al. or Chalasani et al. to minimize voltage transients and current surge while reconnecting batteries to a load.

Claims 12 and 13 depend directly or indirectly from Claim 11 and are allowable over Paul et al., Chalasani et al, and Kakalec et al. for the same reasons.

ALLOWABLE SUBJECT MATTER

Applicants acknowledge the continued allowance of Claims 1-10 and 14-20 and accordingly thank the Examiner.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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